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EGYPTIAN MEDICINE: A CRITICAL STUDY OF RECENT CLAIMS[1]

By T. WINGATE TODD

THERE is no people whose doings and whose thoughts are more fascinating to investigators of today than the ancient Egyptians, and modern writers, in their boundless enthusiasm, have ascribed to them thoughts and interpretations, even scientific practices, far beyond their deserts. The human race is not singularly inventive or piercingly discriminative by nature and the Egyptians in spite of their wonderful civilization were no exception to this rule. Before we accept the advanced views on hygiene and contagion, the skill in surgery and great development of medicine with which this people is credited, it is incumbent on us to examine the evidence with the greatest care.

In ancient times medicine was bound up with religion and magic. In one individual were frequently combined the functions of the priest, the physician, the magician, the interpreter of dreams, and even the kingship. Man's attitude toward disease only slowly changed from that which he adopted towards the other mysteries which surrounded him (2). For long ages disease and its cure were ascribed either to influences of a supernatural character calling for propitiation or to beings of a human or non-human kind who could be compelled or exorcised.

Only very gradually did materialistic conceptions supervene upon this early interpretation. With this subject Rivers has recently dealt very clearly (2) and has shown that when such materialistic views did make their appearance they were usually related either to animals or to an altered character of the blood. From the former arose the idea of the causation of disease and death by such creatures as worms and snakes (take for example the setting up of the serpent standard by Moses) and from the other the now obsolete humoral pathology.

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[1] Address delivered before the American Historical Association at a symposium upon the History of Science, Cleveland, December, 1919.

Egyptian history covers the period of transition from the earlier animistic to the later materialistic interpretation. It is therefore evident that this period in human thought was not conducive to any real progress in medicine such as many have claimed for this ancient people.

It is not proposed to review the entire period of Egyptian medicine or to deal exhaustively with the subject. Many excellent reviews such as Finlayson's (3) have already been published. The purpose of this paper is simply to call attention to certain facts which have recently come to light and to certain methods of attacking the subject recently called into action.

In the first place it is well to differentiate clearly between real Egyptian medicine and Egyptian medicine after it had become more or less permeated by Greek influence.

In Graeco-Roman times Egyptian physicians and Egyptian health resorts enjoyed great vogue. Early in the sixth century B.C. a party of Greek mercenaries with Psammetichus II carved their names on a statue in front of the rock temple at Abu-Simbel. Shortly after this there was founded at Naucratis a Greek factory. But Herodotus's description of his journey to Egypt about the middle of the fifth century B.C. when the country was under Persian rule, gives the first real account of Egypt by an outsider (1). From this time on Egypt was visited more or less regularly by the Greeks especially after Alexander's conquest and the establishment of the Ptolemaic dynasty. From the third century onward, Greek graffiti became plentiful. The first record of a Roman visitor occurs in a papyrus of 112 B.C. From then till the end of the second century A.D. Greek and Roman tourists abounded and the last recorded visit is that of Nikagoras in the Reign of Constantine (1).

During the Graeco-Roman period were produced such works as those of Herodotus, Diodorus Siculus, and Pliny and from these writings it has been customary to cull much of the history of Egyptian medicine, but uncritical writings must not be permitted to obscure the evidence yielded by Egyptian monuments and by the actual bodies of the Egyptians themselves.

To cover in chronological order the 4,000 years of the rise, zenith, and decadence of Egyptian civilization in their relation to Medicine seems a less suitable method of presentation than the discussion of historical evidence regarding modern subdivisions of the subject, and I propose therefore to adopt the latter method as briefer and more concise.

SPECIALIZATION IN MEDICINE

In Herodotus we find the following passage: "Each physician applies himself to one disease only, and no more. All places abound in physicians; some physicians are for the eyes, others for the head, others for the teeth, others for the parts about the belly, and others for internal disorders" (4).

Spiegelberg has recently brought this statement forward with two other references as evidence of the high level of specialization to which medicine was brought in Egyptian times (5). The other references are to Sethe and Wilcken. Spiegelberg points out that the title physician for the eyes not infrequently occurs in demotic documents of the Ptolemaic period. It is significant also that Wilcken's reference to a physician for the intestine occurs in a Greek document (Chrestom No. 136). It must be emphasized that during the later period of Egyptian history the Egyptians were probably much influenced by the Greeks and Romans and that true specialization in medicine was of Greek origin.

Diseases of the eye and intestinal disorders are, and apparently have always been, very common in the Orient. Hydrotherapy was a fetish to the Egyptians as is indicated by the frequent allusion to the cleansing powers of water in Egyptian and Hebrew literature and to the number of enemata and douches which we know from the papyri to have been in use in Egypt. A physician whose function it was to cure by enemata was an exponent of a cult rather than a specialist as we understand the term today.

According to Sethe the most ancient reference to a physician for the eyes dates from the time of the Old Empire (ca. 2500 B.C.) but it does not appear convincing to me that this reference is actually to a specialist. There are constant references in Egyptian literature to Amon as healer of the eyes. Gunn writing upon certain texts of the XIXth Dynasty (1350–1200 B.C.) points out that poetic figures are common in odes and inscriptions to the gods and that two expressions were used for blindness by the workmen of the XIXth Dynasty, namely "to see darkness by day" and "to see a darkness of thy making." "If this means *physical*[1] blindness," says Gunn, "it is very strange that this affliction should occur proportionately so often and at the same time be the only one specified by the victims of divine retribution" (6). It is inadvisable to read too much into this one solitary reference of Sethe's and one should not infer from it specialization in eye diseases any more than one should build up theories of specialization in diseases of the nose from the recorded fact that Sekhet-enankh healed the nostrils of Pharaoh Sahura of the Vth Dynasty. Nor can the claim for specialization be substantiated by collections of prescriptions such as occur in the Ebers and Hearst papyri: this arrangement would be a natural grouping. The occasional reference to special physicians or temples in the Ebers papyrus can not be held to indicate specialization. Hence the enthusiastic statement of Von Klein (7) that "the subdivision of the medical profession . . . must have had a tendency, in some respects, to advance medical knowledge by specializing it" can not be accepted.

GREEK MEDICINE IN EGYPT

A study of the Oxyrhynchus papyri shows that the formality of Egyptian medicine lost nothing from the introduction of Greek and later of Roman law. Papyri LI and LII, for example, show rigid compliance with formality combined with an entire lack of attention to medical questions (8). This is not the place, however, to discuss the inter-relations of Greek and Egyptian medicine.

THERAPEUSIS

The elaborate therapeusis of the Egyptians dwindles upon critical examination to collections of incantations and weird random mixtures of refuse with roots and other substances some of which latter were indeed utilized with increasing discrimination by the

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[1] The italics are mine.—T. W. T.

Greeks and are still to be found in modern pharmacopoeias. Such collections are found in the Ebers and Hearst papyri (9, 10). Both these papyri were compiled from scattered local data between the XIIth and XVIIIth Dynasties (2000–1500 B.C.) by itinerant priest-physicians, and all other extant medical papyri date from this heyday of Egyptian medicine. In interpreting these prescriptions it must be recalled that this was still the age when men believed disease to be sent by the gods, who might be propitiated, or brought by demons, who could be exorcised. The materialistic viewpoint has scarcely as yet attained any foothold. Hence it was the prayer or the incantation which was the important feature of the cure; the prescription was only accessory. The sources common to both these records were collections, largely traditional, gathered by physicians in different towns or attached to different temples. There is nothing to indicate a canonical or sacred character in either although as Reisner points out (10) it was upon some such collection that Clement of Alexandria about 200 A.D. based his unwarranted statement regarding the hermetic books of Thoth.

OBSTETRICS

Obstetrics was not one of the duties of the physician; it was relegated to midwives. Apparently the obstetric stool of the last century has survived with very little modification from early days (9, Plate XXXVII, fig. 1). It is of peculiar interest to note the crystallization and survival of ancient Egyptian birth practices among modern African tribes. The researches of Blackman (11, 12) and Seligmann and Murray (13) upon this subject have not only shown the antiquity and probable origin of these practices among Negroes of today but also have thrown much light upon the interpretation of Egyptian inscriptions and graphic representations, a method of attack which is of particular significance in the interpretation of figures hitherto identified with surgery.

SURGERY

Regarding surgical practices we know that previous to the XVIIIth Dynasty (ca. 1500 B.C.) it was common to incise abscesses and remove fatty tumors, for specific reference is made to these operations in the Ebers papyrus.

Rude splints were certainly employed at the time of the Vth Dynasty (ca. 2600 B.C.). From mummies of this period Elliot Smith has described cases of compound fracture of the femur and forearm treated in this manner and points out that splints were employed to support the injured limb but without any idea of controlling the fragments (14).

The alleged amputation of limbs depends upon a statement of Larrey, which, as Finlayson points out, is probably a misunderstanding (3). Sacrificial amputation of the foreleg of a living bull calf (15) is the only amputation for which there is evidence in Egypt.

RITUALISTIC PRACTICES

It is altogether an error to classify such rites as circumcision under the heading of surgery. One fallacy of modern writers is to take it for granted, seemingly, that the ancients thought in our terms. Probably nothing was further from the mind of the artist who depicted circumcision upon the wall of the tomb of the VIth Dynasty official at Sakkara (ca. 2500 B.C.) than the idea that he was figuring a surgical operation. Yet, thinking in modern terms, the association of surgery of the extremities with circumcision has been inferred by Müller (16) and it is therefore necessary to review the evidence offered by the drawings themselves.

In the left picture the operator is using a flint of primitive type and the tall youth who is undergoing the rite has his upwardly directed arms held by a man who stands behind. In the right picture a more elaborate instrument is being used and the youth has no supporter. It is altogether inconceivable that the artist has given us two representations of alternate methods. Nor is there any intrinsic evidence in favor of Walsh's supposition that the operator to the left is engaged in breaking a chordee (17). As in the case of birth rituals, modern Negro practices are of great assistance in interpreting these scenes.

Among the native tribes of East Africa the circumcision ceremony varies considerably in detail and also in the age of the initiates.

Whereas in some tribes boys undergo the rite at 10 or 11, in others the age is as high as 18. Among the most instructive records are those dealing with the ritual among the tribes of Kenya Province, British East Africa (18, 19).

In Chuka the circumcision consists of two operations. At the first the lad squats but holds his arms in the position represented on the tomb at Sakkara and as in that picture also he is supported by a "godfather." The operator cuts off only the extremity of the foreskin. After ten minutes or so the operator again appears and trims off all the remaining foreskin. At this second operation the "godfather" is not present but a warrior sits on each side of the boy, to assist him, support his penis, and check the bleeding. It is impossible to fail to associate these two stages of the Chuka circumcision with the two pictures redrawn by Müller (13, plate 106) in the first of which the "godfather" supports the lad while the operator uses a flint knife and in the second of which the lad is unaccompanied by a godfather and the operator is using a less primitive instrument. The inscriptions relating to these pictures seem to be portions of the ritual and ought not to be interpreted as evidencing either pain or jocularity.

Among the Amwimbe on the other hand the entire ritual is performed at one operation but the technique differs from that in vogue among the Chuka. After the operator has cut off the extreme end of the foreskin he makes a transverse slit across the dorsum and pushes the glans through it so that a ragged pucker of skin is left below. The second detail resembles the operation among the more northerly Meru and at once recalls the end result obtained as far back as late predynastic Egyptian times and represented on the great slate palette of King Narmer. Circumcision is certainly an initiation rite of great antiquity (20).

If the explanation here put forward be the correct interpretation of the two pictures of circumcision may we not go further and eliminate any idea of surgery from the remaining representations, considering them to be parts of the ritualistic ceremonial of circumcision. With this interpretation the inscriptions will perfectly well agree. The attitude of the lad on the extreme right of the lower figure in plate 105 is not necessarily indicative of pain but is at least comparable with that of the lad awaiting the second circumcision operation in Chuka (18, fig. 3). The figures said to represent surgery of the hand and foot and the opening of boils on the neck and knee appear to me undoubtedly ceremonial. Apart from the improbability of the artist delineating surgery in connection with circumcision and apart from the technical difficulties in interpreting the pictures from a surgical standpoint, there is other evidence against the current view. If the artist had intended to represent a cutting operation in any of these he could clearly have done it as is shown in the circumcision pictures, all the drawings being obviously by the same hand. Again in the Mosaic law part of the ritual of the cleansing ceremony was the anointing of the right ear, the thumb, and great toe (21). That the Mosaic law was an adaptation of Egyptian custom of about 1230 B.C. there is no question and I submit that in spite of the fact that in the Sakkara drawings it is the left thumb and great toe which are pictured the ritual is probably the same.

DENTAL SURGERY

It has frequently been asserted that the Egyptians were skilled in dental surgery. This statement seems to be based in the first place upon the writings of Herodotus (4) and confirmed by the slender evidence of the use of mouth washes (e.g. 9). Again the finding in the mouth of pieces of gilt from facial adornments of the dead has encouraged belief in this theory (22). But Wood Jones has clearly stated that at no period of Egyptian history do the teeth of any body show evidence of the dentist's handiwork (22) and his assertion is amply borne out by most investigators who have experience of Egyptian skeletons. This does not mean that no dentistry was needed among this ancient people, for Egyptian skeletons of all periods and of every social rank show caries, abscesses, and evidence of pyorrhea (24).

Hooton has recently claimed "the existence of a rudimentary knowledge of oral surgery in the Old Empire" (ca. 2500 B.C.) (23), basing his claim upon a single mandible which presents two foramina above and behind the mental foramen on the right side. One of these foramina lies between the roots of the second premolar and the first molar and the other between the roots of the first molar. Circumstantial evidence is against the drilling of holes in the jaw to evacuate pus from a root abscess among a people who so far as we know did not even extract teeth, let alone perform operations calling for considerable knowledge and skill which such a procedure would imply. And far more convincing than circumstantial evidence is the evidence provided by the mandible itself. For the anterior of the two holes is plainly an accessory mental foramen—much larger than usual it is true and accidentally associated with the extreme anterior limit of the abscess cavity—such as is by no means infrequent in human and especially African mandibles. Further, the posterior foramen bears all the ear marks of a pathological opening through which the abscess has evacuated itself, the pus having caused erosion of the surface of the mandible around its outlet. In the face of these facts, therefore, it is apparent that the evidence in no way justifies us in doubting the truth of Wood Jones's assertion.

The only evidence for artificial teeth is a single case in which a number of teeth bound together with gold wire were found in a *Roman* tomb in Egypt (24). Ruffer asserts that this apparatus was merely for show and not for use since it could not possibly have been employed for mastication.

ANATOMY

As regards anatomy the evidence of the papyri shows that the Egyptians knew of the locations of certain organs but had no understanding of their function. Their ritual obsessed them even in this. The bodily proportions were confined within the rigid canons of their pictorial art (25). We are no more justified in believing that on account of their elaborate scheme of mummification the ancient Egyptians knew any anatomy than we are justified in taking for granted, from their devotion to cleanliness and all forms of "hydrotherapy"—washings, enemata, douches, and the like—that they had any conception of contagion or of the real cause of disease. Alan Gardiner states the Egyptian attitude excellently when he says "the Egyptians were the greatest formalists the world has ever known; their literature, their art, nay even their history seems to crystallize in given types from which individual variations were few." And this intense formalism was just as true of their medicine as of the other phases of their life.

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